

REMARKS

This responds to the Office Action mailed on April 20, 2004. No claims are canceled or added. As a result, claims 1-10, 14-21 and 24-90 remain pending in this application. Claims 8, 20, 26, 52, 63, 73 and 78 are amended to clarify that the polishing pad drum has a length that spans across the wafer to polish the wafer in one pass, and that the wafer is moved with respect to the polishing pad drum in the direction of the tangential force to throw debris in a direction toward a previously processed portion the wafer to avoid interfering with polishing during the one pass.

Withdrawn Claims

Claims 3, 17, 28, 37, 40, 58, 67-68, 76, 81 and 89 have been withdrawn from consideration. Applicant respectfully requests consideration of the withdrawn claims upon the allowance of a generic claim. Applicant believes that at least claims, 1, 26, 33, 51, 61, 72, 77 and 82 are generic.

§102 Rejection of the Claims

Claims 1, 6, 8, 51, 55 and 77 were rejected under 35 USC § 102(b) as being anticipated by Dion et al. (U.S. 3,943,666). Applicant respectfully traverses the rejection.

In the Office Action, the Examiner agreed with Applicant's previous arguments that Shimizu ('115) does not disclose the use of a rigid polishing pad, and now relies on Dion et al. ('666), previously cited of interest, to teach the use of such a pad. The rejection stated: '*666 disclose the claimed invention including the polishing pad being a rigid pad with embedded abrasive.*'

Applicant respectfully disagrees that Dion et al. teach the use of such a pad. Should the rejections be maintained, Applicant respectfully requests, pursuant to 37 C.F.R. 1.104 (a)(2), that the rejections include such information as may be useful in aiding the applicant to judge the propriety of continuing the prosecution. Specifically, should the rejections be maintained, Applicant respectfully requests a clear identification of the portions of the applied reference that are relied upon to reject the claim. FIG. 3 of Dion et al. illustrates an abrasive element 30 in the

form of a right circular cylinder having a central shaft 31 (column 3 lines 66-67). FIG. 5 of Dion et al. illustrates an abrasive element comprising a cylinder 40 in the shape of a truncated cone having an axial shaft 41 (column 3 lines 66-67). FIG. 6 of Dion et al. illustrates an abrasive element that comprises a cylindrical disk 50 having a body shaft 51 (column 4 lines 35-36). FIG. 9 of Dion et al. illustrates a rotatable abrasive cylinder 78 having an axial shaft 79 (column 5 lines 34-35).

With respect to independent claim 1, Applicant is unable to find, among other things, a polishing pad drum being formed by a rigid polishing pad, as recited in the claim. Claims 6 and 8 depend on independent claim 1, and are believed to be patentable at least for the reasons provided with respect to claim 1.

With respect to independent claim 51, Applicant is unable to find a method that includes rotating a rigid polishing pad that forms a polishing pad drum, as recited in the claim. Claim 55 depends on claim 51, and is believed to be patentable at least for the reasons provided with respect to claim 51. With respect to independent claim 77, Applicant is unable to find a method that includes providing a rigid polishing pad that forms a polishing pad drum with an embedded polishing abrasive, as recited in the claim.

Applicant respectfully requests withdrawal of the rejection, and reconsideration and allowance of the claims.

§103 Rejection of the Claims

Claims 1, 2, 4-9, 14, 16, 18-21, 24-25, 33, 35-36, 38-39, 41-56, 59-61, 63-66, 69-75, 77-80, 82-88 and 90-92 were rejected under 35 USC § 103(a) as being unpatentable over Shimizu (U.S. 5,827,115) in view of Dion et al. Applicant respectfully traverses.

With respect to independent claims 1, 14, 33, 45, 47, 49, 51, 61, 72, 77, 82 and 90, Applicant is unable to find, among other things in the cited portions of the applied references, a polishing pad drum formed by a rigid polishing pad, as recited in the claims. The dependent claims are believed to be patentable at least for the reasons provided with respect to their base independent claim. Additionally, with respect to claims 8, 20, 52, 63, 73 and 78, for example, Applicant is unable to find, among other things in the cited portions of the applied references, a polishing pad drum that has a length that spans across the wafer to polish the wafer in one pass, and that the wafer is moved with respect to the polishing pad drum in the direction of the

tangential force to throw debris in a direction toward a previously processed portion the wafer to avoid interfering with polishing during the one pass, as recited in the claims. Shimuzu refers to a reciprocating motion (column 5 line 52, column 7 lines 33-36).

Claims 10, 15, 26-27, 29-32, 34 and 62 were rejected under 35 USC § 103(a) as being unpatentable over Shimizu in view of Dion et al., and further in view of Bruxvoort et al. (U.S. 5,958,794). With respect to independent claim 26, Applicant is unable to find, among other things in the applied references, a rigid polishing pad formed into a polishing pad drum, where the polishing pad drum has a length that spans across the wafer to polish the wafer in one pass, and where the wafer is moved with respect to the polishing pad drum in the direction of the tangential force to throw debris in a direction toward a previously processed portion the wafer to avoid interfering with polishing during the one pass, as recited in the claim. Dependent claims 10, 15, 27, 29-32, 34 and 62 are believed to be patentable at least for the reasons provided with respect to their independent base claims.

Furthermore, Applicant respectfully asserts that the applied references do not provide a fair suggestion to combine the references. Shimizu relates to polishing a semiconductor wafer (Abstract) and Bruxvoort relates to modifying a surface of a semiconductor wafer (Abstract); whereas Dion et al. relates to burnishing flexible recording material (such as audio recording tape, video tape and annular recording discs) to remove agglomerated particles or chunks of iron oxide (column 1 lines 6-40).

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6960 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 7th day of June, 2004.

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